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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/890,563	08/02/2001	Ichiro Amimori	012777-043	4585

21839 7590 11/22/2004

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EXAMINER	
HON, SOW FUN	

ART UNIT	PAPER NUMBER
1772	

DATE MAILED: 11/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/890,563	AMIMORI ET AL.	
	Examiner	Art Unit	
	Sow-Fun Hon	1772	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10,12,14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10,12,14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 09/16/04 has been entered.

Priority

2. Receipt is acknowledged of papers JP Patent Application Nos. 11-29322, 11-29381 and 11-67444, submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Withdrawn Rejections

3. The 35 U.S.C. 103(a) rejections have been withdrawn due to Applicant's amendment dated 09/16/04.

Claim Objections

4. Claim 6 is objected to because of minor informalities, and should be rewritten to depend on claim 1. Claim 6 is presently dependent on claim 3 via claim 5, all of which are dependent on parent claim 1. Claim 3 already recites a cross-linked binder polymer, and monodispersed transparent fine particles having an average particle size larger than the average thickness of the hard coat layer and which have a particle size distribution of 0.2 or less in terms of coefficient of

variation. Claim 5 recites a fluorine-containing macromolecular compound while claim 6 recites a fluorine-containing compound. Claim 6 depends on claim 5, and thus fails to further narrow the limitation of "fluorine-containing macromolecular compound" in claim 5.

5. Claim 7 is objected to because the parent claim 1 already recites an optical film comprising, on a transparent support, a hard coat layer and a low-refractive-index layer. There is also a lack of antecedent basis for the monodispersed transparent fine particles.

New Rejections

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 1-10, 12, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oka et al. (US 5,909,314).

Regarding claim 1, Oka teaches an optical film comprising, on a transparent support (substrate film 11) and an antiglare hard coat layer 17 (having a hard property), containing a matte material 18, and a low refractive layer 13 (column 27, lines 34-41) which maintains the concavo-convex structure. See Fig. 17 of Oka on the next page. The refractive index of the low refractive index material is 1.45 or less (not more than) (column 13, lines 24-29). The matte material 18 has a particle diameter in the range of from 1 to 10 microns (column 9, lines 17-27). Oka teaches that the matte material enables the antiglare property to be increased without detriment to the transparency (column 9, lines 17-27).

The optical film (antiglare-antireflection) film has a total transmittance of light of 94 %, which is within the claimed range of 93.5 % or more, and a haze of 5.0 (column 27, lines 29-34) which is within the claimed range of 1.0 % or more.

Oka teaches that hard coat 17 (binder resin used in the antiglare layer) may have a thickness of greater than or equal to 0.5 microns, or 3 microns (column 9, lines 54-64). The matte material 18 has a particle size (diameter) in the range of from 1 to 10 microns (column 9, lines 17-27). Therefore providing an antiglare layer wherein the particle size is larger than the thickness of the hardcoat is the result of routine experimentation, by one of ordinary skill in the art at the time the invention was made.

Oka teaches that the optical film (antiglare-antireflection) film has a total transmittance of light of 94 %, which is within the claimed range of 93.5 % or more, and a haze of 5.0 (column 27, lines 29-34) which is within the claimed range of 1.0 % or more. Therefore, although Oka fails to teach that the density of the particles is in a range of 100 to 5000 particles/m^2, due to the overlapping total transmittance of light and haze, the claimed density of the particles inherently overlaps the density of the particles in the optical film of Oka.

Regarding claim 2, the low refractive index layer is formed by incorporating therein a polyvinylidene fluoride (column 13, lines 24-32), which is a fluorine-containing macromolecular compound, and a fluorinated compound trifluoroethyl acrylate into a polyfunctional acrylate cross-linked (cured) by ionization radiation (column 13, lines 34-44). The coefficient of kinetic friction of 0.2 or less is inherent in the fluorine-containing compounds.

Regarding claim 3, the hard coat (antiglare) layer contains a cross-linked (thermosetting or ionizing radiation curing) binder polymer (column 10, lines 1-10). The matte particles are

transparent (have a high transparency) (column 9, lines 15-20). Figure 17 of Oka, on the previous page, shows that the matte particles are monodisperse, thus inherently having a particle size distribution of 0.2 or less in terms of coefficient of variation.

Regarding claim 4, the matte material includes plastic beads (column 9, lines 15-25). Plastic is much softer and easier to scratch relative to the inorganic materials for which the Moh's scale of hardness was developed. Hence the plastic beads inherently have a Moh's hardness scale of less than 7.

Regarding claim 5, the low refractive index layer is formed by incorporating therein a polyvinylidene fluoride (column 13, lines 24-32), which is a fluorine-containing macromolecular compound, and a fluorinated compound trifluoroethyl acrylate into a polyfunctional acrylate cross-linked (cured) by ionization radiation (column 13, lines 34-44). The coefficient of kinetic friction of 0.2 or less is inherent in the fluorine-containing compounds.

Regarding claim 6, Oka teaches that hard coat 17 (binder resin used in the antiglare layer) may have a thickness of greater than or equal to 0.5 microns (column 9, lines 54-64). The matte material 18 has a particle size (diameter) in the range of from 1 to 10 microns (column 9, lines 17-27). Therefore when the particle size is greater than the thickness of the hardcoat, the claim limitation is met.

The hard coat (antiglare) layer contains a cross-linked (thermosetting or ionizing radiation curing) binder polymer (column 10, lines 1-10). The matte particles are transparent (have a high transparency) (column 9, lines 15-20). Figure 17 of Oka, on the previous page, shows that the matte particles are monodisperse, thus inherently having a particle size distribution of 0.2 or less in terms of coefficient of variation. The low refractive index layer is

formed by incorporating therein a polyvinylidene fluoride (column 13, lines 24-32), which is a fluorine-containing macromolecular compound, and a fluorinated compound trifluoroethyl acrylate into a polyfunctional acrylate cross-linked (cured) by ionization radiation (column 13, lines 34-44). The refractive index is 1.45 or less (not more than) (column 13, lines 24-34). The coefficient of kinetic friction of 0.15 or less is inherent in the fluorine-containing compounds.

Regarding claim 7, Oka teaches an optical film comprising, on a transparent support (substrate film 11) and an antiglare layer 17 hard coat (having a hard property), containing a matte material 18,and a low refractive layer 13 (column 27, lines 34-41) which maintains the concavo-convex structure. The refractive index of the low refractive index material is 1.45 or less (not more than) (column 13, lines 24-29). The fact that Oka terms the low refractive index material as having a "low refractive index" and has a different composition from the transparent substrate (column 8, lines 40-50) implies that the low-refractive-index layer has a lower refractive index than that of the transparent support. Oka teaches that hard coat 17 (binder resin used in the antiglare layer) may have a thickness of greater than or equal to 0.5 microns (column 9, lines 54-64). The matte material 18 has a particle size (diameter) in the range of from 1 to 10 microns (column 9, lines 17-27). Therefore when the particle size is greater than the thickness of the hardcoat, the claim limitation is met. The matte particles are transparent (have a high transparency) (column 9, lines 15-20). Figure 17 of Oka, on the previous page, shows that the matte particles are monodisperse, thus inherently having a particle size distribution of 0.1 or less in terms of coefficient of variation. The hard coat (antiglare) layer contains a cross-linked (thermosetting or ionizing radiation curing) binder polymer (column 10, lines 1-10).

Regarding claim 8, Oka teaches a polarizing plate comprising a polarizing layer 20 and two protective TAC films 19 thereon, wherein the optical (antiglare-antireflection) film, layers 12-13, is laminated on one of the protective films 19 (column 22, lines 30-40). The matted layer is disposed at the opposite side to the polarizing layer. See Fig. 19 of Oka below.

Regarding claim 9, Oka teaches a liquid crystal display device using the optical (antiglare-antireflection) film (column 22, lines 45-55).

Regarding claim 10, Oka teaches a liquid crystal display device, comprising two polarizing plates (19/20/19) provided on both sides of a liquid crystal cell 21. The optical (antiglare-antireflection) film is laminated on one of the protective films 19 (column 22, lines 47-57). While Fig. 20 of Oka shows the matted layer disposed toward the front of the display, away from the back light side, alternately providing a matted layer toward the back light side is the result of routine experimentation, by one of ordinary skill in the art at the time the invention was made. The optical film of Oka reduces reflection, but at the same time, markedly increases transmittance (column 8, lines 1-10). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made, to have provided a matted layer toward the back light side of the display, in order to reduce scattering (reflection) of the back light rays, and to increase transmittance of the back light rays to the front of the display.

Regarding claim 12, Oka teaches that hard coat 17 (binder resin used in the antiglare layer) may have a thickness of greater than or equal to 0.5 microns (column 9, lines 54-64). The matte material 18 has a particle size (diameter) in the range of from 1 to 10 microns (column 9, lines 17-27). Therefore the claimed limitation wherein an average particle diameter of the particles is larger than the thickness of the hard coat layer by 0.5 to 5.0 microns is met.

Regarding claim 14, Oka teaches that the optical film (antiglare-antireflection) film has a total transmittance of light of 94 %, which is within the claimed range of 93.5 % or more, and a haze of 5.0 (column 27, lines 29-34) which is within the claimed range of 1.0 % or more. Therefore, although Oka fails to teach that the density of the particles is in a range of 200 to 2000 particles/m^2, due to the overlapping total transmittance of light and haze, the claimed density of the particles inherently overlaps the density of the particles in the optical film of Oka.

Response to Arguments

8. Applicant's arguments with respect to claims 1-10, 12, 14 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number (571)272-1492. The examiner can normally be reached Monday to Friday from 10:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on (571)272-1498. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. Hon

Sow-Fun Hon

11/12/07